

1 **Claims**

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- 3 1. A driver assembly for a panel loudspeaker, the
4 driver assembly comprising a voice coil, a magnet
5 assembly, a substantially rigid planar member, and
6 a retaining element for retaining the magnet
7 assembly with respect to the voice coil, wherein
8 the retaining element defines a first surface
9 adapted to be removably coupled to a panel forming
10 an acoustic radiator, and the substantially rigid
11 planar member is attached to the voice coil and is
12 disposed between the voice coil and said first
13 surface.
- 14
- 15 2. The driver assembly as claimed in Claim 1 wherein
16 the retaining element consists of a hydrogel.
- 17
- 18 3. The driver assembly as claimed in Claim 1 or Claim
19 2 wherein the retaining element consists of
20 silicone.
- 21
- 22 4. The driver assembly as claimed in any preceding
23 Claim wherein retaining element consists of a
24 material having a Shore A hardness in the range 0
25 to 20.
- 26
- 27 5. The driver assembly as claimed in Claim 4 wherein
28 retaining element consists of a material having a
29 Shore A hardness in the range 5 to 15.
- 30
- 31 6. The driver assembly as claimed in Claim 5 wherein
32 retaining element consists of a material having a
33 Shore A hardness of approximately 10.

- 1
- 2 7. The driver assembly as claimed in any preceding
- 3 Claim wherein the retaining element functions to
- 4 retain the voice coil and the magnet assembly in a
- 5 spatially separated relationship.
- 6
- 7 8. The driver assembly as claimed in any preceding
- 8 Claim wherein the retaining element consists of a
- 9 single moulded element.
- 10
- 11 9. The driver assembly as claimed in any preceding
- 12 Claim wherein the first surface is adapted to be
- 13 removably coupled to the panel forming the acoustic
- 14 radiator.
- 15
- 16 10. The driver assembly as claimed in any preceding
- 17 Claim wherein the magnet assembly comprises an
- 18 axially extending central portion defining a first
- 19 pole of a permanent magnet, a radially extending
- 20 portion coupling the central portion to an axially
- 21 extending magnetic shroud, the shroud defining a
- 22 second pole of the permanent magnet, wherein the
- 23 central portion and the shroud define a flux space
- 24 therebetween.
- 25
- 26 11. The driver assembly as claimed in Claim 10 wherein
- 27 the voice coil extends into the flux space.
- 28
- 29 12. The driver assembly as claimed in Claim 10 or Claim
- 30 11 wherein the flux space is annular.
- 31

- 1 13. The driver assembly as claimed in any preceding
2 Claim wherein the retaining element comprises a
3 disc defining the first surface.
4
- 5 14. The driver assembly as claimed in Claim 13 wherein
6 the retaining element comprises a wall upstanding
7 from an opposing surface of the disc.
8
- 9 15. The driver assembly as claimed in any preceding
10 Claim wherein a volume defined by the retaining
11 element accommodates the magnet assembly and the
12 voice coil.
13
- 14 16. The driver assembly as claimed in Claim 14 or Claim
15 15 wherein the planar member is mounted adjacent
16 said opposing surface of the disc.
17
- 18 17. The driver assembly as claimed in any of Claims 13
19 to 16 wherein the wall has an inner diameter and an
20 outer diameter, and the disc has a diameter greater
21 than said outer diameter such that the disc defines
22 a flange around the wall.
23
- 24 18. The driver assembly as claimed in any of Claims 14
25 to 17 wherein said opposing surface of the disc is
26 provided with one or more continuous ridges
27 extending around the wall.
28
- 29 19. The driver assembly as claimed in Claim 18 wherein
30 the continuous ridges are concentric with the wall.
31

- 1 20. The driver assembly as claimed in any of Claims 14
2 to 19 wherein the wall is provided with a radially
3 extending flange for engaging the magnet assembly.
4
- 5 21. The driver assembly as claimed in any of Claims 14
6 to 20 wherein the outer diameter of the wall
7 decreases in a direction away from the disc.
8
- 9 22. A driver assembly for a panel loudspeaker, the
10 driver assembly comprising a voice coil, a magnet
11 assembly, and a moulded retaining element for
12 retaining the magnet assembly with respect to the
13 voice coil, wherein the moulded retaining element
14 defines a first surface adapted to be coupled to
15 panel forming an acoustic radiator.
16
- 17 23. The driver assembly as claimed in Claim 22 wherein
18 the moulded retaining element consists of an
19 elastomer material.
20
- 21 24. The driver assembly as claimed in Claim 23 wherein
22 the elastomer is a hydrogel.
23
- 24 25. The driver assembly as claimed in any of Claims 22
25 to 24 further comprising a substantially rigid
26 planar member attached to the voice coil, the
27 planar member being disposed between the voice coil
28 and said first surface.
29
- 30 26. A retaining element for a panel loudspeaker driver
31 assembly, the retaining element comprising a disc
32 defining a first surface adapted to be removably
33 coupled to an acoustic radiator, and a wall

1 upstanding from an opposing surface of the disc,
2 wherein the wall is adapted to accommodate a voice
3 coil and a magnet assembly in a spatially separated
4 relationship.

5
6 27. A method of mounting an acoustic radiator of a
7 panel loudspeaker comprising the steps of:
8 locating a voice coil and a magnet assembly in a
9 moulded retaining element, and;
10 removably attaching a surface defined by the
11 moulded retaining element to a panel forming the
12 acoustic radiator.

13
14 28. The method as claimed in Claim 27 wherein the
15 surface is removably attached to the panel without
16 auxiliary fixing means.

17
18 29. The method as claimed in Claim 28 wherein the
19 surface is removably attached to the panel by
20 adhesion.

21
22 30. A method of manufacturing a driving assembly for a
23 panel loudspeaker, the method comprising the steps
24 of:
25 forming a retaining member by injection moulding,
26 and;
27 assembling a voice coil and magnet assembly in the
28 retaining member.

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